VITEK
INDUSTRIAL VIDEO PRODUCTS, INC.

VTD-T4D6HR2MD
2.1 Megapixel 4-IN-1 HD-TVI / AHD / CVI / CVBS Motorized Varifocal WDR Dome Camera with IR LED Illumination

VITEK

FEATURES

- 1/2.9" 2.1 Megapixel Sony® Exmor™ Progressive Scan CMOS Sensor
- 30fps live view @ 1920 x 1080p
- True Day/Night by IR Cut Filter
- HD-TVI / HD-CVI / AHD / 960H CVBS Video Output (Selectable)
- Motorized 2.8~12mm MegaPixel IR Corrected Auto Focus Varifocal Lens with CoC
- 6 Integrated High Power Dynamic IR LEDs with up to 165' IR Range
- 3D-DNR Noise Reduction
- True Wide Dynamic Range (WDR)
- 16:9 Video format
- IP66 Weather Resistance
- Supports Up The COAX Control (CoC)
- Over 1500' HD Video Transmission (Depending on cable characteristics and integrity)
- 12VDC / 24VAC Dual Voltage Operation
- 3 Year Warranty

TRANSCENDENT
VITEK

Safety Precaution

- To prevent electrical shock and risk of fire hazards, do not expose this unit to rain or moisture and only use specified power source..

<table>
<tr><td>⚡</td><td>CAUTION
RISK OF ELECTRIC SHOCK .
DO NOT OPEN</td><td>⚠</td></tr>
<tr><td colspan="3">CAUTION: TO REDUCE THE RISK OF ELECTICAL
SHOCK, DO NOT REMOVE COVER (OR BACK).
NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL</td></tr>
</table>

The symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock.

The symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the unit.

- **Warning :**
  This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.
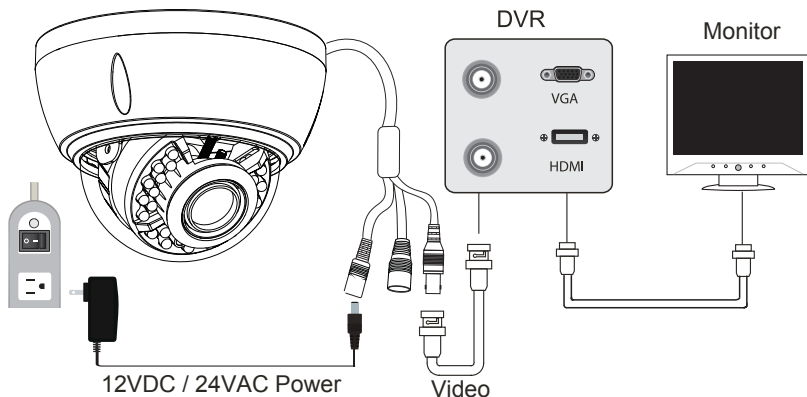
- **Caution :**
  Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
  Main power quality should be that of a typical commercial environment. If the user of the model requires continued operation during power interruptions, it is recommended that the device be powered from an uninterruptible power supply (UPS).

Installation

1) Disconnect power before installation.

2) Confirm proper 12VDC or 24VAC power supply is used to prevent damage to the camera.

3) Do not use in an environment beyond the boundaries of the specifications.

Power & Video Connections

Connect the HD-TVI Video or AHD/CVBS video connector to a BNC patch cable, then to a DVR. Next connect the power connector to a 12VDC or 24VAC power adaptor.

DVR

Monitor

VGA

HDMI

12VDC / 24VAC Power

Video

Video Output Mode Switch:
Select the desired video mode using the dip switches contained within the on-cable Output Mode Switch as follows:

ON	ON	ON	ON
1 2	1 2	1 2	1 2
AHD	**HD-TVI**	**CVI**	**CVBS**

OSD Instruction

1. IRIS

IRIS	ELC
2-MOTOR	⮐
EXPOSURE	⮐
BACKLIGHT	OFF
DAY&NIGHT	⮐
COLOR	⮐
DNR	LOW
IMAGE	⮐
MOTION	OFF
SYSTEM	⮐
EXIT	

IRIS

Electronic Light Control (ELC)
When using a fixed or manual iris lens, the camera's ELC can adjust for moderate changes in illumination levels. While it is fine for indoor applications in fixed illumination conditions, a fixed iris and ELC circuitry cannot approach the range of illumination usable with an auto-iris lens and ALC circuitry.

Automatic Light Control (ALC)
When using an auto-iris lens, the ALC circuitry samples the illumination level and automatically adjusts the iris to create the proper sized aperture for proper exposure.

2-MOTOR

AF (Auto Focus))
Choose between Auto focus and Manual focus.

SCANNING
When Lens scans Half or Full for focusing.

SYNC TDN
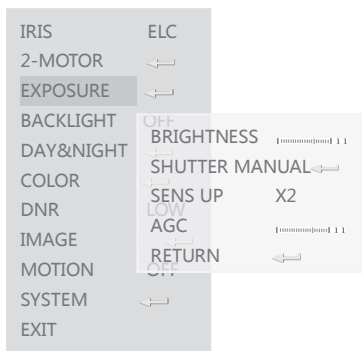Lens scans Half or Full for focusing. Adjust lens when switching from Day to Night or Night to Day.
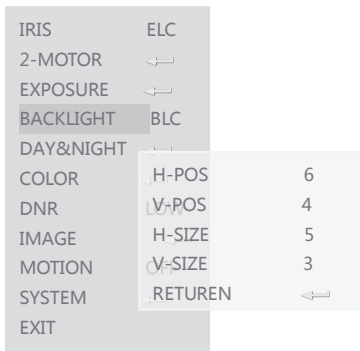
INITIAL
Sets lens parameters from close to far.

2. 2-MOTOR

IRIS	ALC
2-MOTOR	⮐
EXPOSURE	⮐
BACKLIGHT	OFF
DAY&NIGHT	⮐
COLOR	⮐
DNR	LOW
IMAGE	
MOTION	OFF
SYSTEM	⮐
EXIT	

AF MODE	AUTO
SCANNING	HALF
ONE PUSH AF	ON
SYNC TDN	ON
INITIAL	ON
RETURN	⮐

3. EXPOSURE

IRIS	ELC
2-MOTOR	⟵
EXPOSURE	⟵
BACKLIGHT	OFF
DAY&NIGHT	
COLOR	
DNR	
IMAGE	LOW
MOTION	
SYSTEM	⟵
EXIT	

BRIGHTNESS	|ıııııııııı|ııı| 1 1
SHUTTER MANUAL	⟵
SENS UP	X2
AGC	|ıııııııııı|ııı| 1 1
RETURN	⟵

EXPOSURE

BRIGHTNESS
0-20 selectable.

SHUTTER
AUTO/FLICKER/MANUAL

MANUAL MODE
1/25、1/50、1/100、1/200、1/400、1/800、1/1600、
1/3200、1/6400、1/12800、1/25600、1/30000,
selectable.

AUTO
DEBLURE/NORMAL., selectable.

SENS-UP
OFF、X2、X4、X8、X16、X32 selectable.

AGC
0-20 selectable

BACKLIGHT

BACKLIGHT
OFF/HLC/BLC/WDR, used in different environment.

HLC (High Light Compensation)
Cuts out the bright area with a mask and excludes it
from compensation..

LEVEL (0~20)
Sets the HLC level. It determines the video level that
starts cutting out. Lower setting starts the cut out at a
lower light level. The cut out area is masked with
selected color.

COLOR
Select mask color from 9 colors.   Black, White,
Yellow, Cyan, Green, Magenta, Red, Blue and
Customize.

4. BACKLIGHT

IRIS	ELC
2-MOTOR	⟵
EXPOSURE	⟵
BACKLIGHT	BLC
DAY&NIGHT	
COLOR	
DNR	LOW
IMAGE	
MOTION	
SYSTEM	
EXIT	

H-POS	6
V-POS	4
H-SIZE	5
V-SIZE	3
RETUREN	⟵

BLC (Backlight Compensation)
Compensates the video image by cutting out the
bright areas with a mask or adjusting the contrast of
the video. This function is used to brighten an image
in the foreground with a bright light area behind it
such as sunlight, limiting the affect of silhouette. BLC
has a target window for compensation and its size
and position can be set by H-POS, V-POS, H-SIZE and
V-SIZE.

H-POS, V-POS
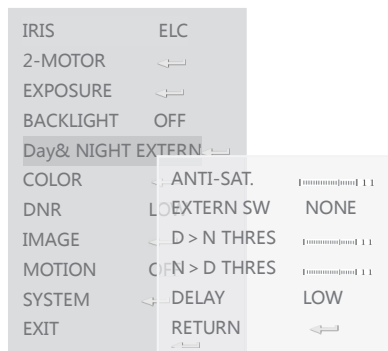Sets the position of BLC area to move vertically and
horizontally.

H-SIZE, V-SIZE
Sets the size of BLC area to move vertically and
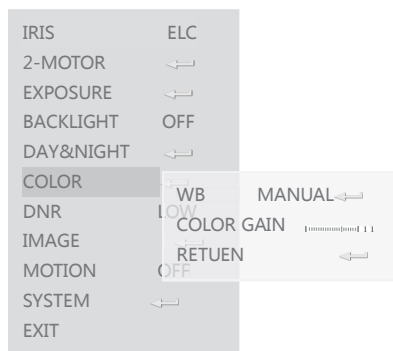horizontally.

WDR:
HIGH/ MIDDLE/ LOW level ,   selectable, 30fps.

⚠️ *Note*: CVBS will stop when WDR is turned on.

5. DAY&NIGHT

IRIS	ELC
2-MOTOR	←
EXPOSURE	←
BACKLIGHT	OFF
Day& NIGHT EXTERN	←
COLOR	
DNR	LO
IMAGE	
MOTION	OF
SYSTEM	←
EXIT	

ANTI-SAT.	|▭▭▭| 1 1
EXTERN SW	NONE
D > N THRES	|▭▭▭| 1 1
N > D THRES	|▭▭▭| 1 1
DELAY	LOW
RETURN	←

Switch settings of Day and Night mode.

AUTO
Used when DAY or NIGHT is determined by light level through the lens.

COLOR
The camera is always in COLOR mode. DAY/NIGHT is disabled and outputs color video

B&W
The camera is always in B/W mode. Forcibly removes IR cut filter and switches to B/W regardless of light level.

EXTERN
DAY or NIGHT is determined by the built-in light photo sensor for cameras with built-in IR LEDS.

ANTI-SAT
Sets the anti saturation level 0~20. Setting high level avoids saturation but the corners will be darker accordingly.

D > N THRES & N > D THRES
Sets the light level for switching from Day to Night / Night to day.

DELAY
Is time in seconds while camera maintains its status before Day to Night / Night to Day switching. (Only available when mode is AUTO or EXTERN).

6. COLOR

IRIS	ELC
2-MOTOR	←
EXPOSURE	←
BACKLIGHT	OFF
DAY&NIGHT	←
COLOR	
DNR	LOW
IMAGE	
MOTION	OFF
SYSTEM	←
EXIT	

WB	MANUAL ←
COLOR GAIN	|▭▭▭| 1 1
RETUEN	←

COLOR

AWB (Auto White Balance)
Automatically tracks the changes of color temperature and continuously adjusts the white balance. AUTO, AUTOext, PRESET and MANUAL modes are available.

AUTO
Optimized for Indoor installation and compensates AWB for low color temperature such as incandescent lights.

AUTOext
Optimized for outdoor sunlight applications and compensates AWB for high color temperature such as sunlight.

PRESET
AWB is performed only whenever button is pressed.

MANUAL
White balance is fixed to the settings by Color-Temperature Red-GAIN and Blue-GAIN. It can be used only when the color temperature does not vary.

7. DNR

IRIS	ELC
2-MOTOR	⏎
EXPOSURE	⏎
BACKLIGHT	OFF
DAY&NIGHT	⏎
COLOR	⏎
DNR	LOW
IMAGE	⏎
MOTION	OFF
SYSTEM	⏎
EXIT	

8. IMAGE

IRIS	ELC		
2-MOTOR	⏎		
EXPOSURE	⏎		
BACKLIGHT	OFF		
DAY&NIGHT	⏎		
COLOR	⏎		
DNR	LOW	SHARPNESS	⌶⌶⌶⌶⌶⌶⌶ 11
IMAGE		GAMMA	0.55
MOTION		ORIENTATION	NORMAL
SYSTEM		FLIP	OFF
EXIT		ACE	OFF
		DEFOG	ON ⏎
		PRIVACY	⏎
		RETURN	⏎

DNR

3D-NR (Digital Noise Reduction)
DNR function improves picture quality by filtering out signal noise which is generated under low light conditions. Set off, low, middle or high level. 3DNR (3-dimensional noise reduction) which reduces noise by multi frames. It is effective in low light. Set to high will reduce the most noise but the image will be less sharp and a tailing effect might occur.

IMAGE

SHARPNESS
Sets the Sharpness level 0~10. Increases or decreases the sharpness of the picture. Too much sharpness can make image harsh and show more noise as well as line flicker at the edge of object in the picture

GAMMA
Used to adjustment the monitor GAMMA value 0.45/0.55/0.65/0.75 selectable.

ORIENTATION
NORMAL / MIRROR / FLIP / MIRROR_V.

ACE
Improves the visibility for the bright areas and the dark areas by compensating the video gain. Care should be taken to select low, middle or high level, because video may lose its quality in some environments by over compensation. Video noise can be increased in the dark area accordingly

DEFOG
Enhance foggy video according to status of scene. Video quality can be less in normal environments.

PRIVACY
Set ON/OFF for enabling/disabling PRIVACY mask. 16 privacy areas are available and each area is programmable in size, color, position and transparency.

ZONE NUM
Selects mask zone number from 0 to 16 to be adjust.

ZONE DISP
Displays OFF/ON for the mask area which you selected.

H-POS, V-POS
Adjusts the mask area H, V position which you selected.

TRANS
Selects transparency rate for the mask area from 0 to 3

9. MOTION

IRIS	ELC
2-MOTOR	⮐
EXPOSURE	⮐
BACKLIGHT	OFF
DAY&NIGHT	⮐
COLOR	⮐
DNR	LOW
IMAGE	⮐
MOTION	**ON**
SYSTEM	
EXIT	

DET WINDOE	⮐
DET TONE	2
MORECT FILL	OFF
SENSITIVITY	[▯▯▯▯▯▯▯|▯▯] 1 1
MOTION OSD	OFF
TEXT ALARM	OFF
SIGNAL OUT	OFF
RETURN	⮐

MOTION

3 motion detection areas are available and each area is programmable in size and location. Motion can be detected in the area and displays the results in blocks and/or a text message

DET WINDOW
WINDOW ZONE : Set the detection zone number from 0 to 3.

H-POS
0-60 horizontal starting point.

V-POS
0-34 vertical ending point.

H-SIZE
0-60 horizontal ending point.

V-SIZE
0-34 vertical ending point.

DET ZONE
Sets the detection zone 0 to 4 display types which window use setting ON.
0) Set 100% opacity level of video background except detection window zone.
1) Set 50% opacity level of video background except detection window zone.
2) Set 25% opacity level of video background except detection window zone.
3) Video background image is same as detection window zone.
4) Detection window zone is displayed with box line

MDRECT FILL
Sets the motion display type when motion is detected in video. Setting ON will display a red solid box type. Setting OFF will display a red outline box type

Sensitivity
Sets the detection sensitivity for motion (0~10). Higher values increases the sensitivity to detect motion. Too low of a value will cause the erratic detection by tree leaves or light level changes

MOTION OSD
Set ON or OFF to display motion results.

TEXT ALARM
Setting ON enables to display a text message "WINDOWS MOVING!!" or icon when motion is detected.

10. SYSTEM

IRIS	ELC
2-MOTOR	←
EXPOSURE	←
BACKLIGHT	OFF
DAY&NIGHT	←
COLOR	
DNR	
IMAGE	
MOTION	
SYSTEM	
EXIT	

COM.	←
IMAGE RANGE	USER ←
COLOR SPACE	HD-CbCr
FRAME RATE	1080P_30FPS
Monitor	0-3
FREQ	PAL
CVBS	ON
LANGUAGE	CHN[S]
COLOR BAR	←
CAM TITLE	OFF
RESET	ON
RETURN	←

SYSTEM

COM.
RS-485 Communication setting ID: 0-255,
BAUDRATE: 2400/4800/9600/57600/115200
selectable.

IMAGE RANGE
USER/FULL/COMP, the OFFSET of USER: 0-32.

COLOR SPACE
HD-CbCr、YUY、SD-CbCr.

FRAME RANGE
1080P/720P_ (25fps/30fps), selectable.

Monitor
0-3, choose a different screen style.

FREQ
NTSC/PAL.

CVBS
ON/OFF.

LAUGUAGE
Multiple languages CHN [S], CHN，EN、JPN
KOR、ITA

COLOR BAR
OFF/ON，used in color contrast test (color bar
on screen).

CAM TITLE
Using the OSD button select letters by
pushing button up, down, left or right.

RESET
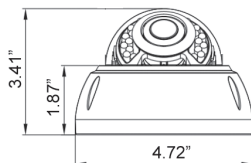Hold OSD button for 10 seconds to reset
camera

VT-TTAR Series

Transcendent Series 4, 8, 16, and 32 Channel 5-In-1 HD-TVI / AHD / CVI / 960H / IP Digital Video Recorders

- 4, 8, 16, or 32 Channel HD-TVI / AHD / CVI / CVBS BNC Inputs + IP Camera Support
- 1-Channel IP Camera Support (VT-TTAR410 / VT-TTAR810) / 4-Channel IP Camera Support (VT-TTAR1620 / VT-TTAR3280)
- 960fps @ 720p & 1080P-Lite / 480fps @ 1080p Recording
- Simple plug and play, point-to-point connection from camera to DVR
- H.264 Compression
- HDMI, VGA, and BNC (Spot) Video Outputs
- 2-Way Audio
- PTZ Control over RS-485
- 16 Alarm inputs / 4 Alarm Output
- Pentaplex: Live Display / Record / Playback / Backup / Remote Access
- 1 Internal SATA2/SATA3 HDD Slot supporting up to 8TB (1 x 8TB HDD) (VT-TTAR410 / VT-TTAR810) / 2 Internal SATA2/SATA3 HDD Slots supporting up to 16TB (2 x 8TB HDD) (TTAR1620) / 8 Internal SATA2/SATA3 HDD Slots supporting up to 64TB (8 x 8TB HDD) Internal Storage (VT-TTAR3280)
- Applications for iOS & Android
- Remote Viewing over the Internet via Web Browser or LAN
- Mac OS® Client & CMS Central Management Software Included
- Supports both Dynamic and Static IP Addresses
- Control locally via USB Mouse, or with the Included IR Remote control
- 3 Year Warranty

Detailed Specifications	
Image Sensor	1/2.9" 2.1 Megapixel Sony® Exmor™ Progressive Scan CMOS Sensor
Signal System	PAL/NTSC
Effective Pixels	1920(H) × 1080(V)
Resolution	HD-TVI / HD-CVI / AHD: 1080p/720p (2.1 MegaPixel) / CVBS: 960H
Video Output	HD-TVI / HD-CVI / AHD / CVBS (Selectable)
Lens	Motorized 2.8~12mm MegaPixel IR Corrected Varifocal Lens
Day/Night	True Day/Night by ICR
Min. Illumination	0.001 Lux @ f2 (B/W) / 0.1Lux @ F2.0 (Color) / 0 Lux (IR ON)
IR LEDs	6x High Power Dynamic IR LEDs
IR Distance	165'
DSS (Sens-Up)	OFF / X2 ~ X32
S/N Ratio	≥50dB (AGC Off)
WDR	True WDR
Digital Noise Reduction (DNR)	3D-DNR
White Balance	Auto / Present / External / Manual
BLC	Adjustable
Defog	Adjustable
Privacy Mask	16 Programmable Areas
Motion Detection	4 Programmable Areas
Up the COAX Control (COC)	YES
Transmission Distance	Up to 1500' (Depending on cable characteristics & integrity)
Power Input	Dual Voltage: 12VDC / 24VAC
Power Consumption (12VDC)	650mA (IR ON) / 220mA (IR OFF)
Power Consumption (24VAC)	325mA (IR ON) / 110mA (IR OFF)
Weather Resistance	IP66
Operation Conditions	-4~122 / 10%~90% Humidity
Weight	17 oz. / 1.06 lbs. / 482g
Dimensions	4.72" x 3.41" x 4.72" (120 x 86.5 x 120mm)

LIMITED PRODUCT WARRANTY

VITEK products carry a three (3) year limited warranty. VITEK warrants to the purchaser that products manufactured by VITEK are free of any rightful claim of infringement or the like, and when used in the manner intended, will be free of defects in materials and workmanship for a period of three (3) years, or as otherwise stated above, from the date of purchase by the end user. This warranty is nontransferable and extends only to the original buyer or end user customer of a VITEK Authorized Reseller.

The product must have been used only for its intended purpose, and not been subjected to damage by misuse, willful or accidental damage, caused by excessive voltage or lightning.

The product must not have been tampered with in any way or the guarantee will be considered null and void.

This guarantee does not affect your statutory rights.

Contact your local VITEK Reseller should servicing become necessary.

VITEK makes no warranty or guarantee whatsoever with respect to products sold or purchased through unauthorized sales channels. Warranty support is available only if product is purchased through a VITEK Authorized Reseller.